

Fabric Covering



Jon Goldenbaum

Is Fabric Covering Dying?



How many are still out there?

The Golden Age



About 15,000

Today?

Over 30,000



700 experimental/LSA

added
a year





Over 3000 covered a year

How long does it last?





R. Pemberton
2/17/08

Cotton/dope: **six years**
outdoors



25 Years
Outdoors

Too long
hangared

Today's Systems

Is it difficult ?



Simple skills, labor intensive

Who's doing the covering?

Cub by pro:
\$25,000

Materials:
\$5,000

Owners/Amateurs



Not an A&P?



- Experimental: no problem
- Certified: A&P, IA mentor
- Pay them to inspect, sign paperwork.

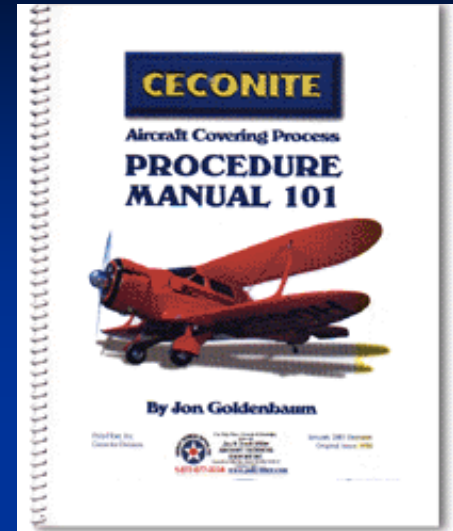
Make a new friend!

How do you learn?

Manuals

Videos/DVDs

Practice kits



Best: Workshops



- Distributors
- EAA Sportair

The past: organic fabrics



- Grade A
- Linen
- Envelopes

- Nitrate dope
- Then butyrate



CECONITE

Randolph
Aircraft Products

**POLY
FIBER**
Aircraft Coatings

The major systems

AIR-TECH
COATINGS INC.

Superflite™

Today: STC's

All Supplemental Type Certificates:

1. List of approved parts (materials)
2. Exact directions (manual)
3. A list of approved aircraft (aml)

The logo for CECONITE, featuring the word "CECONITE" in bold yellow capital letters on a blue rectangular background with a black border.The logo for POLY FIBER Aircraft Coatings, featuring the words "POLY" and "FIBER" in large, bold, red capital letters with black outlines. Below them, "Aircraft Coatings" is written in a smaller black font. A small illustration of a propeller airplane is positioned between the two main words.The logo for AIR-TECH COATINGS INC., featuring the words "AIR-TECH" in a stylized black font above a graphic of a propeller. Below the propeller, "COATINGS INC." is written in a smaller black font. The entire logo is enclosed in a black rectangular border.The logo for Superflite, featuring the word "Superflite" in a stylized red font with a white outline, set against a blue background with white cloud-like patterns.

Mixing not legal!

Ceconite

CECONITE

Randolph
Aircraft Products

- Polyester.
- Heat shrunk
- Nitrate, then butyrate dope
- 12 Coats, choice of paint

Good

- Repairs
- Rejuvenate

Drawbacks

- Burns
- Shrinks
- Humidity (Blush)
- Solvents

Poly- Fiber

- No dope, vinyl
- Heat shrunk
- 9 coats
- Choice of paints

Good

- Does not burn
- Does not shrink
- Repairs
- Rejuvenate



Drawbacks

- Solvents



Hangar Fire



Polyurethane Systems



- Polyester, heat shrunk
- 5 coats, all polyurethane

Good

- Only 5 coats
- High gloss

Drawbacks

- Can be heavy
- Fresh Air Mask
- No rejuvenation
- Solvents

Waterbornes

- Ceconite, heat shrunk,
- Waterborne, little solvents



Good

- Thinned with water
- No solvents

Drawbacks

- Inconsistent
- Water is a bad solvent
- Fresh air mask?

Safety

- Solvents: keep off skin
- Don't splash in eyes
- Respirator if necessary



Let's Cover Cement



- Blanket



- Or envelope



Shrink fabric

- 250, 5% shrink
- 350, 10% shrink
- 426, fabric melts



CALIBRATE: Take the iron's temp.

The only way to tell how tight.

No heat guns!



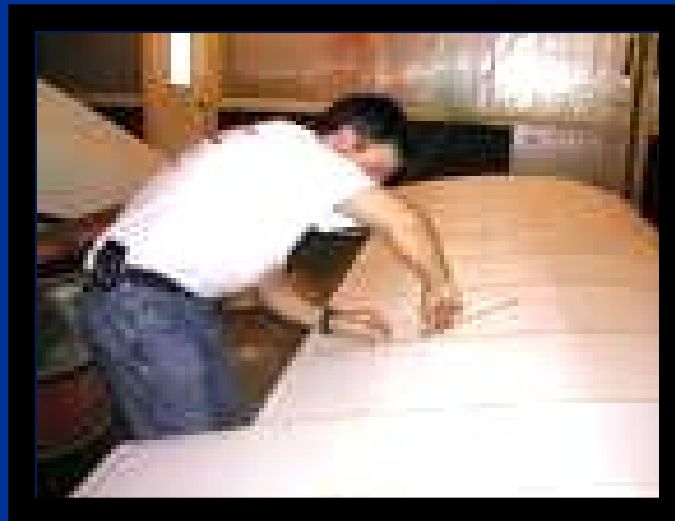
Seal the Fabric

- Fabric primers

1 brushed,
2 sprayed



Ribblacing (mechanical attachments)



Finishing Tapes

- Variety of widths
- Doublers, anywhere two layers helps



No spray booth ?

Make your own



Spray Primers



Spray Silver
or (UV) coats

Spray choice of topcoat

- One part paints: easy repairs
- Polyurethanes, high gloss



Polyurethanes

Unlike most fabric coatings, the spray mist is highly toxic.



Not this !



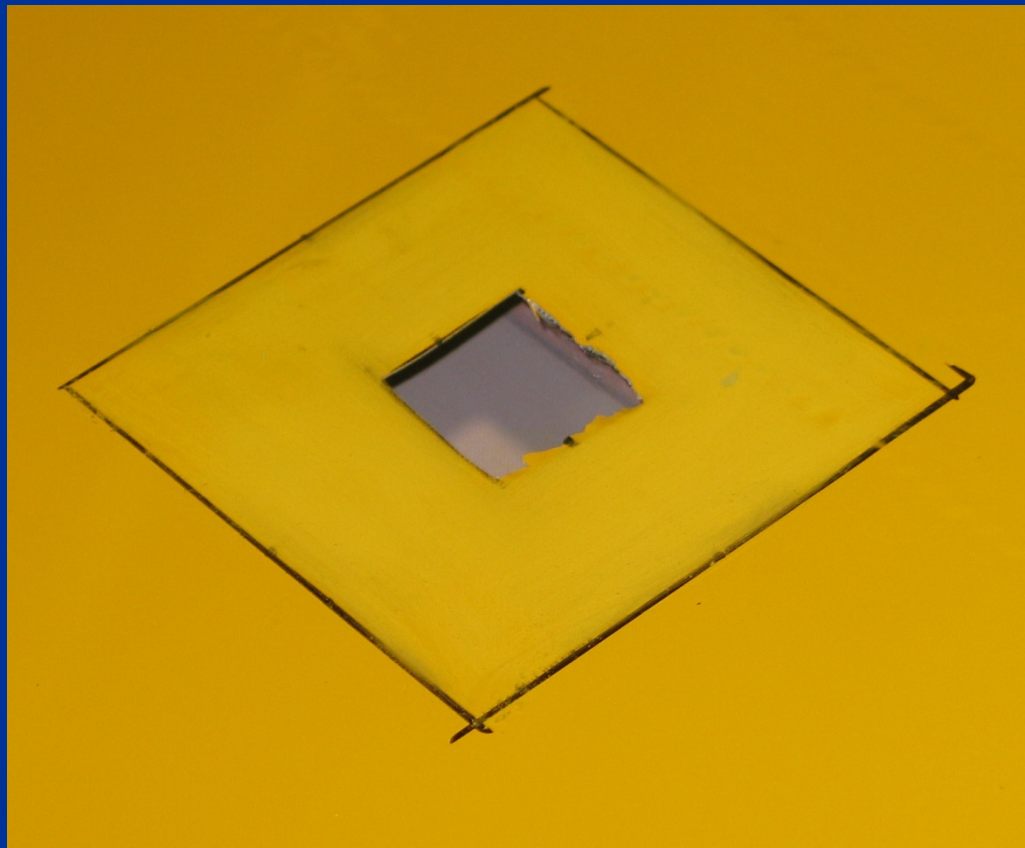
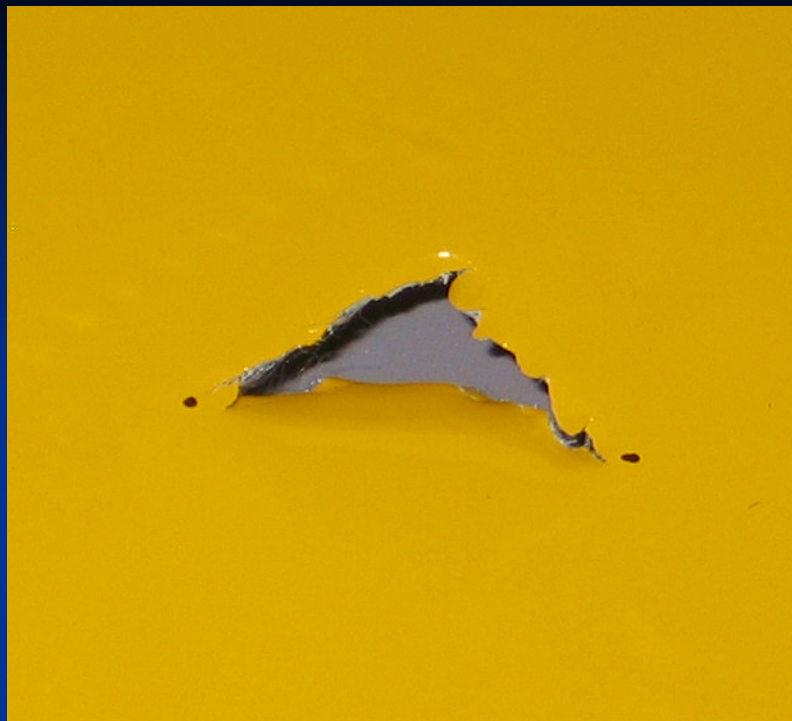
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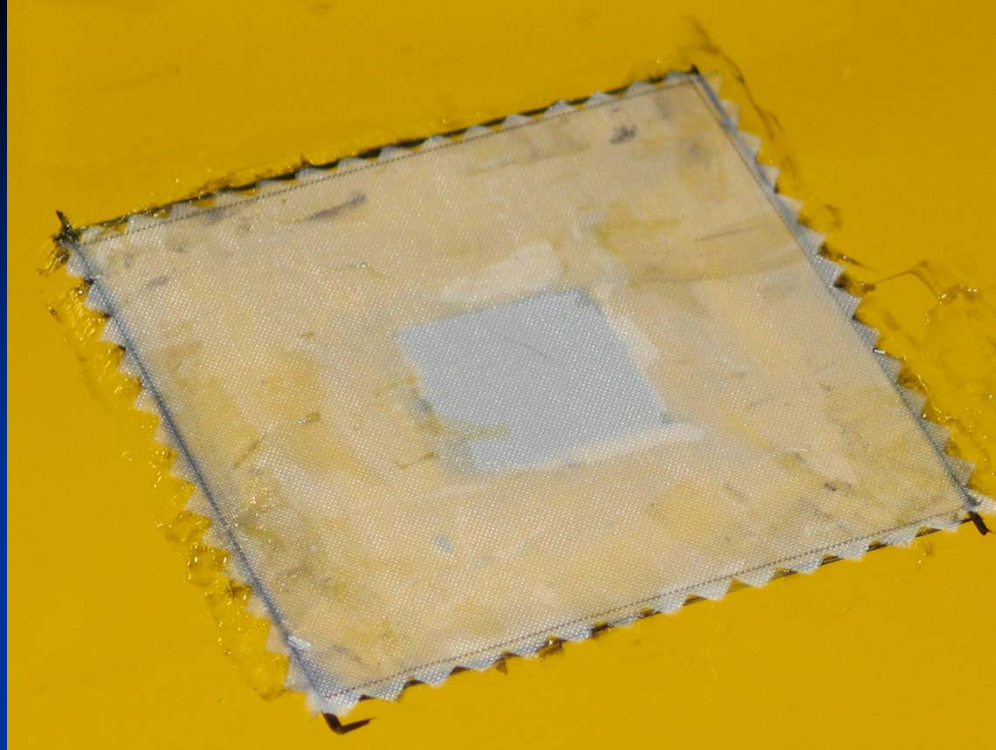


Why are there so many fabric bush planes?



Fabric is easy to Repair







Inspecting Fabric



Testing Fabric



Maule

Certified
Tensile
Tester



Worry about the paint and
coatings, not fabric

Coatings block UV

Cracked? Chipped?

Ringworm? Brittle?

Comparison using a cub as an index



Weight:

1946 Cotton:

(12 Coats)

75 lbs

Ceconite/dope:

(12 Coats)

60 lbs

Poly Fiber:

(9 Coats)

60 lbs

Air Tech:

(5 Coats)

85 lbs

Cost

Ceconite/Dope: 80 gallons

Poly Fiber: 35 gallons

Air Tech: 15 gallons

\$5,000

Summary





- Pick any system
 - All work great.
 - Follow directions
 - Don't mix systems